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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/820,410

04/08/2004

Yi-Cheng Liu

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EXAMINER

SPIELER, WILLIAM

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/820,410	<b>Applicant(s)</b> LIU, YI-CHENG	
	<b>Examiner</b> WILLIAM SPIELER	<b>Art Unit</b> 2169	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 November 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,6,8-10,13,15-17 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,6,8-10,13,15-17 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11 November 2008 has been entered.
2. Claims 1-3, 8-10, 13, 15-17 and 20 are pending.
3. All claims are rejected.

### ***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1, 3, 6, 8, 10, 13, 15, 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butt et al., U.S. Pat. No. 5,889,944 (hereinafter "Butt") in view of Yamagashi, U.S. Pat. No. 5,870,604 (hereinafter "Yamagashi"), Aref et al., U.S. Pat. No. 6,023,720 (hereinafter "Aref"), and Bigus, U.S. Pat. No. 5,442,730 (hereinafter "Bigus").

#### ***As per claim 1, Butt teaches:***

**a resource item and a process** (Butt, col. 1, lines 13-14);

**a fetch module to fetch resource status data** (Butt, col. 1, lines 36-37);

**a timing scheduling module to determine an execution time point for the process according to the resource status data** (Butt, col. 4, lines 44-51); and

**a trigger module to execute the process at the execution time point when the execution time point for the process is present** (Butt, col. 4, lines 21-22), where inherently this step must determine whether the point is present as claimed.

Butt, however, does not teach that the resource item comprises a CPU and a disk of the application system, not that the resource status data comprises data for the CPU use rate and the disk use rate, nor using a neural network model for timing, nor the claimed inputs to the neural network model.

Yamagashi, however, teaches the resource item being a CPU and CPU use rate as resource status data (Yamagashi, col. 4, lines 43-46).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Yamagashi with that of Butt that polling the CPU use rate would be vital to a process scheduling method due to the CPU's inherent importance in processing data.

Aref, however, teaches the resource item being a disk, and disk use rate as resource status data (Aref, col. 5, lines 26-35).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Aref with that of Butt and Yamagashi, as the disk i/o throughput can have a large effect on system performance.

Bigus, however, teaches the use of a neural network model for timing (Bigus, col. 7, lines 60-62) which runs outside a peak time interval (Bigus, col. 8, lines 45-47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the neural network model of Bigus to take the resource item data taught by Aref and Yamagashi, both of which are directed towards using their respective resource item data as input to scheduling modules, as inputs to the neural network model of Bigus in order produce the execution time point so as to provide an enhanced means for scheduling access to resources for a plurality of jobs, as a neural network model offers dynamic adaptability to actual system conditions instead of a static model that must be manually adjusted by system administrators.

***As per claim 3, Butt teaches:***

**the resource status data is within a predetermined reference range; the predetermined reference range is a time interval; and the resource status data is fetched within the time interval** (Butt, Col. 5, lines 45-49).

***As per claim 6, Butt teaches:***

**the fetch module further fetching the resource status data of the resource after the process is executed** (Butt, col. 1, lines 36-37; Butt, col. 5, lines 1-2), where the JBM is the fetch module as claimed.

Claims 8, 10 and 13 correspond to claims 1, 3 and 6 respectively, and are rejected for the same reasons set forth in connection to their corresponding claims above.

Claims 15, 17 and 20 correspond to claims 1, 3 and 6 respectively, and are rejected for the same reasons set forth in connection to their corresponding claims above.

6. Claims 2, 9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butt et al., U.S. Pat. No. 5,889,944 (hereinafter "Butt") in view of Yamagashi, U.S. Pat. No. 5,870,604 (hereinafter "Yamagashi"), Aref et al., U.S. Pat. No. 6,023,720 (hereinafter "Aref"), and Bigus, U.S. Pat. No. 5,442,730 (hereinafter "Bigus") and further in view of Jindal et al., U.S. Pat. No. 6,327,622 (hereinafter "Jindal").

***As per claim 2, the rejection of claim 1 is incorporated, but the incorporated rejection does not teach:***

**the configuration further comprising a fetch frequency, according to which the fetch module fetches the resource status data.**

The analogous and compatible art of Jindal, however, does (Jindal, col. 13, lines 14-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Jindal with those of Butt, Yamagashi, Aref and Bigus as a more practical means of scheduling resource polling by the fetch module.

Claim 9 corresponds to claims 2, and is rejected for the same reasons set forth in connection to its corresponding claims above.

Claim 16 corresponds to claims 2, and is rejected for the same reasons set forth in connection to its corresponding claims above.

### ***Response to Arguments***

7. Applicant's arguments with respect to the pending claims have been considered but are not persuasive.

Applicant relies on what one of ordinary skill in the art would understand the meaning of the phrase "disk use rate." Applicant has provided no evidence that this phrase would be understood in a manner different from that understood by Examiner,

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and Applicant's naked assertion, standing alone, does not suffice to render Applicant's argument persuasive.

The phrase "peak time interval" is understood by Examiner to refer to the time at which the system is at peak usage, and, as noted in the rejection of Claim 1 above, Bigus teaches using the peak time interval as a processing element of the neural network model, specifically in updating the model at a time other than during the peak time interval.

It is clear that the neural network model of Bigus takes as input resource data relating to the performance of the system in order to determine job scheduling. Although Bigus does not specifically teach the use of the claimed inputs, these inputs are well known as inputs to determine job scheduling to the models in Aref and Yamagashi, and are adaptable to use as inputs to the dynamically-updating neural network model of Bigus.

### ***Conclusion***

8. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within



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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM SPIELER whose telephone number is (571) 270-3883. The examiner can normally be reached on Monday to Thursday, 11 AM - 1 PM Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trujillo can be reached on (571) 272-3677. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William Spieler/  
Examiner, Art Unit 2169

/James Trujillo/  
Supervisory Patent Examiner, Art  
Unit 2169